DOCKET NO.: HENK-0156 (H5129)

Application No.: 10/762,175

Office Action Dated: March 22, 2006

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- 1 (Currently Amended). A water-soluble or water-dispersible hotmelt adhesive comprising:
 - A) 20 to 80% by weight of at least one component (A),
- B) $\underline{1}$ 0 to 70% by weight of at least one polymer selected from the group consisting of polyesters, polyurethanes, alkyl poly(meth)acrylates, acrylic acid homopolymers, acrylic acid copolymers and vinyl polymers as component (B),
- C) 10 to 70% by weight of at least one resin as component (C) that is different from said at least one polymer of component (B), said resin comprising styrene/acrylic acid copolymer,
 - D) 0 to 30% by weight of at least one plasticizer as component (D),
 - E) 0 to 3% by weight of at least one additive as component (E),

the sum total of components (A) to (E) being 100% by weight and component (A) being a graft copolymer containing:

- i) 30 to 90% by weight olefinically unsaturated monomer, wherein said olefinically unsaturated monomer corresponds to either
- (i-a) at least one olefinically unsaturated monomer selected from the group consisting of
- a) mono- and di-esters of crotonic acid, cinnamic acid, fumaric acid, maleic acid, citraconic acid, and itaconic acid;
 - b) carboxyfunctional monomers;
- c) N-vinyl caprolactam, vinyl phosphonates, N-vinyl formamides, N-vinyl acetamides, hydroxypropyl acrylates and methacrylates, monoacrylates and monomethacrylates of polyalkylene glycols, acrylates, methacrylates, acrylic acid and methacrylic acid amides containing amine groups;
- d) vinyl esters corresponding to general formula (I) CH₂=CH--O-- C(O)--R₁, with R_1 =C₁₁₋₂₁, (I)

the at least one olefinically unsaturated monomer of group (a), (b), (c) or (d) being present in the graft copolymer in a quantity of up to 50% by weight; or

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(i-b) a mixture of olefinically unsaturated monomers of vinyl acetate and, based on the graft copolymer, up to 50% by weight of at least one olefinically unsaturated monomer selected from the group consisting of stearyl acrylate, vinyl laurate, vinyl versatate, lauryl acrylate, lauryl methacrylate, dibutyl maleate, dibutyl itaconate, dibutyl fumarate and acrylates and methacrylates corresponding to general formula (II): CH₂=CR₂--C(O)--O--R₃ with R₂=H or CH₃ and R₃=C₁₂₋₂₂; (II) or

- (i-c) at least one monomer selected from the group consisting of vinyl acetate and vinyl propionate; and
- ii) 10 to 70% by weight of polyalkylene oxide where with a molecular weight of 400 to 50,000 g/mol, the ethylene oxide content of the polyalkylene oxide is being at least 50% by weight;

wherein at least 1% by weight of component (B) is present if said olefinically unsaturated monomer corresponds to (i c) but not to (i a) or (i b).

2 (Withdrawn). A hotmelt adhesive as claimed in claim 1, wherein the olefinically unsaturated monomer corresponds to group (i-a) and contains at least one olefinically unsaturated monomer selected from the group consisting of acrylates and methacrylates corresponding to general formula (II):

$$CH_2=CR_2--C(O)--O--R_3$$
 with $R_2=H$ or CH_3 and $R_3=C_{12-22}$. (II)

- 3 (Original). A hotmelt adhesive as claimed in claim 1, wherein the ethylene oxide content of the graft copolymer is at least 75% by weight.
- 4 (Original). A hotmelt adhesive as claimed in claim 1 having a Brookfield viscosity at 150 °C. of 200 mPa.s to 2,500 mPa.s, as measured by ASTM D 3236-88.
- 5 (Original). A hotmelt adhesive as claimed in claim 1, wherein the polyalkylene oxides are selected from the group consisting of homopolymers of ethylene oxide, block copolymers of ethylene oxide and propylene oxide, statistical copolymers of ethylene oxide and propylene oxide, ether-terminated homopolymers of ethylene oxide, ester-terminated homopolymers of ethylene oxide, ether-terminated block copolymers of ethylene

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oxide and propylene oxide, ester-terminated block copolymers of ethylene oxide and propylene oxide, ether-terminated statistical copolymers of ethylene oxide and propylene oxide, and ester-terminated statistical copolymers of ethylene oxide and propylene oxide.

- 6 (Original). A hotmelt adhesive as claimed in claim 1, wherein the polyalkylene oxide is a mixture of at least one high molecular weight polyalkylene oxide and at least one low molecular weight polyalkylene oxide, said mixture having a Brookfield melt viscosity of 100 mPa.s to 80,000 mPa.s at 100 °C, as measured by ASTM D 3236-88.
- 7 (Original). A hotmelt adhesive as claimed in claim 1 wherein the graft copolymer is comprised of 60 to 80% by weight olefinically unsaturated monomer.
- 8 (Currently Amended). A hot melt adhesive as claimed in claim 1, wherein component (B) is comprised of at least one of:
- B1) 10 to 50% by weight, based on the weight of the hotmelt adhesive, of at least one (meth)acrylic acid polymer;
- B2) 5 to 30% by weight, based on the weight of the hotmelt adhesive, of at least one polyester;
- B3) at least one alkyl poly(meth)acrylate, the alkyl group having a chain length of 1 to 18 carbon atoms;
 - B4) at least one polyvinyl alcohol with a molecular weight above 1,000 g/mol;
- B5) at least one polyvinyl alkylether containing 1 to 14 carbon atoms in the alkyl group; or
 - B6) 5 to 30% by weight of at least one polyurethane.
- 9 (Original). A hotmelt adhesive as claimed in claim 1, wherein component (B) comprises a polyester based on aromatic dicarboxylic acids containing sulfo groups.
- 10 (Currently Amended). A hotmelt adhesive as claimed in claim 1, wherein component (C) additionally comprises at least one resin selected from the group consisting of a) hydroabietyl alcohol and esters thereof; b) natural resins and modified natural resins; c)

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copolymers of styrene and maleic anhydride; d) acrylic acid copolymers <u>other than</u> styrene/acrylic acid copolymers; e) resins based on functional hydrocarbon resins; and (f) alkyl esters of partly hydrogenated rosins.

- 11 (Currently Amended). A hotmelt adhesive as claimed in claim 1, comprising:
- A) 20 to 80% by weight of component (A);
- B) 5 to 20% by weight of at least one polyester as component (B2);
- C) 10 to 70% by weight of at least one <u>styrene/acrylic acid copolymer as component</u> (C);
- D) 5 to 25% by weight of at least one plasticizer based on polyalkylene glycol with a molecular weight of 200 to 6,000 g/mol as component (D);

the sum total of the components being 100% by weight.

12-15 (Canceled).

- 16 (Original). An article of manufacture comprising a hotmelt adhesive as claimed in claim 1 and a substrate.
- 17 (Original). An article of manufacture as claimed in claim 16, wherein said article of manufacture is selected from the group consisting of hollow containers, books, boxes, and sanitary articles.
- 18 (Original). An article of manufacture as claimed in claim 16, wherein said substrate is comprised of plastic.
- 19 (Original). An article of manufacture as claimed in claim 16, comprising said hotmelt adhesive, a hollow container, and a label wherein said label is bonded to said hollow container using said hotmelt adhesive.